

Amendment to the Claims:

1-9. (canceled)

10. (previously amended) A process for the preparation of well-defined cells of substantially uniform size and shape to be used in an electrophoretic display, which process comprises the steps of:

- a) coating a layer of thermoplastic or thermoset precursor on a conductor film;
- b) embossing the thermoplastic or thermoset precursor layer with a pre-patterned male mold to form microcups;
- c) hardening the embossed thermoplastic or thermoset precursor layer;
- d) releasing the mold from the hardened thermoplastic or thermoset precursor layer; and
- e) filling the microcups with a charged pigment suspension in a dielectric solvent or solvent mixture to form the well-defined cells.

11. (currently amended) The process of Claim 10 wherein said thermoplastic or thermoset precursor is selected from the group consisting of polyvalent acrylate, polyvalent methacrylate, ~~cyanacrylate~~, polyvalent vinyl, polyvalent epoxide, polyvalent allyl, and oligomers; or polymers containing crosslinkable functional groups.

12. (original) The process of Claim 10 wherein the thermoplastic or thermoset precursor layer is embossed at a temperature near or above its glass transition temperature.

13. (previously presented) The process of Claim 12 wherein the glass transition temperature ranges from about -70°C to about 150°C.

14. (previously presented) The process of Claim 10 wherein the hardening of the thermoplastic or thermoset precursor layer is accomplished by cross-linking by radiation, heat,

moisture, cooling or evaporation of a solvent or plasticizer.

15. (previously presented) The process of Claim 10 wherein the hardening of the thermoplastic or thermoset precursor layer is accomplished by UV, visible light, near IR, or electron beam radiation.

16. (original) The process of Claim 10 wherein the pre-patterned male mold is released before, during or after the thermoplastic or thermoset precursor layer is hardened.

17. (previously amended) A process for the preparation of well-defined cells of substantially uniform size and shape to be used in an electrophoretic display, which process comprises the steps of:

- a) coating a layer of radiation curable composition on a conductor film;
- b) imagewise exposing the radiation curable layer;
- c) removing the unexposed areas by a developer or solvent to reveal an array of microcups; and
- d) filling the microcups with a charged pigment dispersion in a dielectric solvent or solvent mixture to form the well-defined cells.

18. (currently amended) The process of Claim 17 wherein said radiation curable composition comprises a material selected from the group consisting of polyvalent acrylate, polyvalent methacrylate, ~~cyanocrylate~~, polyvalent vinyl, polyvalent epoxide, polyvalent allyl, and oligomers or polymers containing crosslinkable functional groups.

19. (original) The process of Claim 17 wherein the imagewise exposure is accomplished by UV, visible light, near IR, or electron beam radiation.

20. (previously amended) A process for the preparation of an array of well-defined cells used in an electrophoretic display, which process comprises the steps of:

a) filling an array of microcups with a dielectric fluid containing a mixture of dispersions in a dielectric solvent or solvent mixture, said mixture of dispersions comprising at least a suspension of charged pigment particles and a dispersion of a thermoplastic or thermoset precursor composition which has a specific gravity lower than that of the dielectric solvent or solvent mixture; and

b) sealing the array of filled microcups to form the array of well-defined cells by curing the thermoplastic or thermoset precursor composition during or after it phase separates and forms a supernatant layer above the dielectric solvent or solvent mixture.

21. (previously amended) The process of Claim 20 wherein the thermoplastic or thermoset precursor composition comprises a material selected from the group consisting of polyvalent acrylate, polyvalent methacrylate, cyanoacrylate, polyvalent vinyl, polyvalent epoxide, polyvalent isocyanate, polyvalent allyl, and oligomers or polymers containing crosslinkable functional groups.

22. (previously amended) A process for the preparation of well-defined cells used in an electrophoretic display, which process comprises the steps of:

a) filling microcups with a dielectric fluid containing at least a suspension of charged pigment particles in a dielectric solvent or solvent mixture,

b) sealing the filled microcups by overcoating onto said dielectric fluid a thermoplastic or thermoset precursor composition which is at least partially immiscible with said dielectric solvent or solvent mixture and has a specific gravity lower than that of said dielectric solvent or solvent mixture, and

c) curing said thermoplastic or thermoset precursor composition to form the well-defined cells.

23. (previously amended) The process of Claim 22 wherein the thermoplastic or thermoset precursor composition is diluted with a volatile solvent or solvent mixture which is evaporated after said composition is coated onto the dielectric fluid.

24. (previously amended) The process of Claim 22 wherein the overcoated thermoplastic or thermoset precursor composition is cured by radiation, heat, moisture, or interfacial reactions at the interface between the composition and the dielectric fluid.

25. (previously amended) The process of Claim 22 wherein the thermoplastic or thermoset precursor composition comprises a material selected from the group consisting of polyvalent acrylate, polyvalent methacrylate, cyanoacrylate, polyvalent vinyl, polyvalent epoxide, polyvalent isocyanate, polyvalent allyl, and oligomers or polymers containing crosslinkable functional groups.

26. (previously amended) A process for the manufacture of an electrophoretic display, which process comprises the steps of:

- a) preparing an array of microcups by first coating a layer of a thermoplastic or thermoset precursor on a conductor film followed by embossing the thermoplastic or thermoset precursor layer with a male mold or by imagewise exposing a layer of a radiation curable material and removing the unexposed areas;
- b) filling the thus-formed array of microcups with a dielectric fluid containing at least a charged pigment suspension in a dielectric solvent or solvent mixture;
- c) sealing the array of filled microcups to form a sealed array of electrophoretic cells; and
- d) laminating the sealed array of electrophoretic cells with a second conductor film pre-coated with an adhesive layer to form the electrophoretic display.

27. (original) The process of Claim 26 wherein the adhesive layer is crosslinkable by heat, moisture or radiation, and is cured during or after lamination.

28. (previously amended) A process for the manufacture of a multi-color electrophoretic display, which process comprises the steps of:

- a) preparing an array of microcups by first coating a layer of a thermoplastic or

thermoset precursor on a conductor film followed by embossing the thermoplastic or thermoset precursor layer with a male mold or by imagewise exposing a layer of a radiation curable material and removing the unexposed areas;

- b) laminating the thus formed array of microcups with a layer of positive photoresist;
- c) imagewise exposing the positive photoresist to selectively open the microcups in a predetermined area;
- d) filling the opened microcups with a dielectric fluid comprising at least a white pigment dispersion in a dielectric solvent or solvent mixture containing a dye or pigment dispersion of a first color;
- e) sealing the filled microcups to form sealed electrophoretic cells containing said white pigment dispersion in said dielectric solvent or solvent mixture of the first color;
- f) repeating steps c) to e) in different areas with dielectric fluids of different colors to generate groups of sealed electrophoretic cells containing dielectric fluids of different colors thus forming a sealed array of electrophoretic cells;
- g) removing residual positive photoresist, if any; and
- h) laminating the sealed array of electrophoretic cells with a second conductor film precoated with an adhesive layer to form the multi-color electrophoretic display.

29. (previously amended) The process of Claim 26 wherein the filling and sealing of the microcups is accomplished by filling the microcups with the dielectric fluid containing a mixture of dispersions in a dielectric solvent or solvent mixture, wherein the mixture of dispersions comprises at least a suspension of charged pigment particles and a dispersion of a thermoplastic or thermoset precursor composition which has a specific gravity lower than that of the dielectric solvent or solvent mixture, followed by curing the thermoplastic or thermoset precursor composition during or after it phase separates and forms a supernatant layer above the dielectric solvent or solvent mixture.

30. (previously amended) The process of Claim 28 wherein the filling and sealing of the microcups is accomplished by filling the microcups with the dielectric fluid containing a mixture of dispersions in a dielectric solvent or solvent mixture, wherein the mixture of dispersions comprises at least a suspension of charged pigment particles and a dispersion of a thermoplastic or thermoset precursor composition which has a specific gravity lower than that of the dielectric solvent or solvent mixture, followed by curing the thermoplastic or thermoset precursor composition during or after it phase separates and forms a supernatant layer above the dielectric solvent or solvent mixture.

31. (previously amended) The process of Claim 26 wherein the sealing of the filled microcups is accomplished by overcoating onto said dielectric fluid a thermoplastic or thermoset precursor composition which is at least partially immiscible with said dielectric solvent or solvent mixture and has a specific gravity lower than that of said dielectric solvent or solvent mixture, followed by curing said thermoplastic or thermoset precursor composition.

32. (previously amended) The process of Claim 28 wherein the sealing of the filled microcups is accomplished by overcoating onto said dielectric fluid a thermoplastic or thermoset precursor composition which is at least partially immiscible with said dielectric solvent or solvent mixture and has a specific gravity lower than that of said dielectric solvent or solvent mixture, followed by curing said thermoplastic or thermoset precursor composition.

33. (canceled)

34. (original) The process of Claim 28 wherein an adhesive layer is precoated on the positive photoresist and laminated onto the array of microcups.

35. (canceled)

36. (previously amended) The process of Claim 34 wherein said adhesive is

developable by a developer of the positive photoresist.

37. (previously amended) The process of Claim 22 wherein the dielectric solvent or solvent mixture has a dielectric constant ranging from about 2 to about 30.

38. (previously presented) The process of Claim 22 wherein the dielectric solvent or solvent mixture comprises at least a dispersion of white pigment particles dispersed in said dielectric solvent or solvent mixture colored by a dye or a second color pigment dispersion.

39. (previously presented) The process of Claim 38 wherein the dye or color pigment dispersion is nonionic or has a charge polarity different from that of the white pigment dispersion.

40. (previously presented) The process of Claim 22 wherein the suspension comprises charged TiO₂ particles dispersed in a colored or blackened solvent.

41. (previously amended) The process of Claim 22 wherein the suspension is of a subtractive or additive color.

42-47. (canceled)

48. (previously presented) The process of Claim 10 wherein said conductor film is patterned.

49. (previously presented) The process of Claim 26 wherein one of the conductor films is transparent.

50. (previously presented) The process of Claim 28 wherein one of the conductor films is transparent.

51. (previously amended) The process of Claim 22 wherein the dielectric solvent or solvent mixture has a dielectric constant ranging from about 2 to about 10.

52-54. (canceled)

55. (previously amended) The process of Claim 20 wherein the dielectric solvent or solvent mixture has a dielectric constant ranging from about 2 to about 30.

56. (previously presented) The process of Claim 20 wherein the dielectric solvent or solvent mixture comprises at least a dispersion of white pigment particles dispersed in said dielectric solvent or solvent mixture colored by a dye or a second color pigment dispersion.

57. (previously presented) The process of Claim 56 wherein the dye or color pigment dispersion is nonionic or has a charge polarity different from that of the white pigment dispersion.

58. (previously presented) The process of Claim 20 wherein the suspension comprises charged TiO₂ particles dispersed in a colored or blackened solvent.

59. (previously presented) The process of Claim 20 wherein the suspension is of a subtractive or additive color.

60. (previously presented) The process of Claim 11 wherein said polyvalent vinyl is vinylbenzene, vinylsilane or vinylether.

61. (previously presented) The process of Claim 13 wherein said glass transition temperature ranges from about -20°C to about 100°C.

62. (previously presented) The process of Claim 18 wherein said polyvalent vinyl is vinylbenzene, vinylsilane or vinylether.

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63. (previously presented) The process of Claim 21 wherein said polyvalent vinyl is vinylbenzene, vinylsilane or vinylether.

64. (previously presented) The process of Claim 25 wherein said polyvalent vinyl is vinylbenzene, vinylsilane or vinylether.